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DETERMINANTS OF A RELATIONAL EXCHANGE ORIENTATION IN THE MARKETING–MANUFACTURING INTERFACE: AN EMPIRICAL INVESTIGATION

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ABSTRACT

During the last decade, both marketing managers and researchers have focused heavily on interorganizational exchange relationships. In this paper we apply the concept of relational exchange to the intra-organizational exchange relationship between the marketing and manufacturing functions. We apply a relational exchange instrument consisting of four dimensions (trust, bonding, empathy and reciprocity) to the marketing–manufacturing interface and conduct an empirical investigation in order to validate the use of such an instrument in this setting. We find that the relational exchange scale consists of four components of a relational exchange orientation that are both theoretically meaningful and empirically discrete. In addition, we identify five determinants (resource dependence, communication difficulties, procedural fairness, interfunctional rivalry and interfunctional distance) and explore how these determinants influence the individual dimensions of the relational exchange orientation. We report a number of differences between the marketing and manufacturing functions with regards to the impact of aforementioned determinants and relational exchange orientation dimensions.

INTRODUCTION

The concept of relational exchange has received a great deal of attention in marketing theory and practice. Instead of focusing on exchanges in single transactions, the importance of building long-term, value-laden and interactive relational exchanges between buyers and sellers has been advanced extensively in the literature (Dwyer et al., 1987; Morgan and Hunt, 1994; Sheaves and Barnes, 1996; Sheth and Parvatiyar, 1995). Lately, the concept of relational exchanges has been broadened to include intra-organizational relationships as well (Hunt and Morgan, 1994; Nevin, 1995). Cross-functional relationships carry implications for organizational effectiveness (Grönroos, 1995; Narver and Slater, 1990). As multidisciplinary teams are used and firms are adopting flexible and flatter structures in order

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to reduce time to market, the interfaces of the marketing function with other functional specializations are becoming increasingly important (Day, 1992, 1994; Herman and Baker, 1985; Hutt, 1995; Jaworski and Kohli, 1993; Kohli and Jaworski, 1990). Fisher et al. (1997) argue that the effective integration of marketing and engineering, for instance, is crucial to organizational performance. In addition, the marketing–manufacturing interface has been identified as a major determinant of competitive performance in today's marketplace. Various theoretical frameworks have been designed for achieving effective co-operation between the domains of marketing and manufacturing (Chakravarty and Ghose, 1992; Crittenden, 1992; Crittenden et al., 1993; Dess, 1987; Ghose and Mukhopadhyay, 1993; Lovelock, 1989; Rho et al., 1994; Sogomonian and Tang, 1993; St John and Hall, 1991).

At the same time, however, it has been pointed out that interdepartmental differences of opinion between marketing and manufacturing often lead to parochial thinking and suboptimization (Dougherty, 1992; Ghose and Mukhopadhyay, 1993; Hutt, 1995; Larson, 1992). In the literature on intra-organizational relationships, a number of mechanisms have been advocated to overcome barriers to the marketing–manufacturing interface and to establish interface congruence (Crittenden et al., 1993; Rho et al., 1994). Examples are rule-based procedures (e.g. quality and inventory control) (St John and Hall, 1991; Ghose and Mukhopadhyay, 1993), joint planning committees (Fombrun, 1986) and cross-functional structures (Frankwick et al., 1994; Griffin and Hauser, 1995). However, several authors have questioned whether the aforementioned mechanisms should be considered a panacea for improving the marketing–manufacturing interface (Larson, 1992). As Hutt (1995, p. 355) states, 'a relationship management perspective is equally important in nurturing and sustaining relationships with internal constituents'. Therefore, the concept of a relational exchange orientation has long since been identified as the motivational basis behind successful exchange relationships (Konovsky and Pugh, 1994). As there are two sides to an exchange relationship, it seems important to take a dyadic perspective in order to see whether determinants of an exchange relationship differ between marketing and manufacturing.

In this paper we will explore the concept of relational exchange orientation with respect to the marketing–manufacturing interface. First, we will examine the concept of relational exchange orientation with respect to the marketing–manufacturing interface in further detail. Secondly, we will identify a number of structural and social antecedents of an interfunctional relational exchange orientation. These include mutual resource dependence, communication difficulties, procedural fairness, interfunctional rivalry and interfunctional distance. Next, we will report on the results of an empirical study designed specifically to validate a relational exchange orientation scale for the marketing–manufacturing interface and to investigate the role of the aforementioned antecedents on this type of orientation. In conclusion, we will address the theoretical as well as the managerial implications of our findings.

BARRIERS TO THE MARKETING–MANUFACTURING INTERFACE

As a result of the division of labour and responsibilities in organizations, marketing and manufacturing departments have often tended to perform as independent

entities and according to separate function-level strategies (Anderson, 1982; Dutton and Jackson, 1987). Harmonious co-existence between these two departments in particular has been viewed as virtually impossible (Shapiro, 1977). Hayes and Wheelwright (1984) even argue that interfunctional conflict and friction is much more prevalent in the marketing–manufacturing interface than in any other interface. Generally speaking, a major obstacle to the marketing–manufacturing interface is a fundamental difference in functional orientation. Traditionally, manufacturing has been assigned the task of producing products of a pre-specified quality level at minimal cost. Hence, manufacturing strategy is related to supply governance (Crittenden et al., 1993). In contrast, marketing has been held responsible for revenues by means of demand generation. In many instances, interdepartmental perspectives on supply and demand do not match. For instance, an often cited source of conflict concerns the breadth of the product line. Marketing would like to see a wide product range that can satisfy the diverse tastes of the firm's customers, while manufacturing desires long production runs with a limited product line in order to reduce costs. Similarly, marketing often calls for an extensive inventory of products so that they can meet the expected or unexpected needs of customers, whereas manufacturing objects, contending that all products cannot be kept in storage due to costs associated with large inventories (Kahn and Mentzer, 1994; Konijnendijk, 1993; Powers et al., 1988; Rho et al., 1994).

Based on a review of the literature and company observations, Crittenden et al. (1993) have composed a typology of barriers to the marketing–manufacturing interface that encompasses three elements: (1) issues of diversity, (2) issues of conformity, and (3) issues of dependability. Diversity issues pertain to the length and/or breadth of the product line, customization of products and product line changes. The basic area of conflict is that marketing frequently attempts to increase diversity by introducing new models and product modifications. Manufacturing, on the other hand, inclines towards standardization of the product range and often objects to myopic product line decisions. Conformity issues relate to production and capacity scheduling. Manufacturing cannot always accommodate anticipated or unexpected sales growth or customer rush orders. Finally, dependability issues concern the delivery and quality of products. Expectations of fast delivery and quality levels cannot always easily be met by manufacturing departments. Shorter product life cycles and decreased time to market that may give a firm a competitive edge but also put a strain on the manufacturing budget and constrain an effective working relationship between the two organizational functions. Despite the virtual impossibility of the marketing–manufacturing interface adhered to by Shapiro (1977), more recent, albeit scarce, conceptual and empirical work offers a glimpse of optimism (Frankwick et al., 1994; Ghose and Mukhopadhyay, 1993; Griffin and Hauser, 1995; St John and Hall, 1991). Therefore, in the next section we will discuss how barriers between marketing and manufacturing may be overcome.

OVERCOMING BARRIERS: CONCEPTUALIZING A RELATIONAL EXCHANGE ORIENTATION

As research in organizational behaviour has revealed, interdepartmental goal congruence and perceived interdependence depends first and foremost on the

establishment of high-quality exchange relationships (Blau, 1964; Eisenberger et al., 1986; Konovsky and Pugh, 1994; Organ, 1988; Rousseau, 1989; Scholl, 1981). A mutual relational exchange orientation may facilitate the marketing–manufacturing interface, as this describes the motivational basis behind employee behaviour and the formation of positive employee attitudes. In the relationship marketing literature a number of constructs have been identified on the basis of relationship studies as predictors or 'core relationship building blocks' (Wilson, 1995, p. 335) of successful customer–firm relationships. These relationship variables include, among others, trust, commitment, reciprocity, co-operation and social bonds. However, it has been argued that additional research is needed on the specification of a relatively comprehensive instrument that systematically integrates the aforementioned relationship-evaluation variables (Anderson, 1995; Wilson, 1995). Callaghan et al. (1995) designed and empirically tested such an instrument for measuring relational exchange orientation consisting of four dimensions: trust, bonding, reciprocity and empathy. We will briefly discuss these four dimensions below.

Trust. Trust has been identified as an essential ingredient in relational exchanges (Crosby et al., 1990; Han et al., 1993; Kumar et al., 1995; Rotter, 1967). Callaghan et al. (1995, p. 60) define trust as 'the dimension of a business relationship that determines the level to which each party feels they can rely on the integrity of the promise offered by the other person'. Trust is important when partners in a relationship are to develop their exchange of information. As Maltz and Kohli (1996) have demonstrated there is a positive relationship between trust and perceived quality of information. This will eventually lead to increased mutual commitment and less conflict will result (Allen and Meyer, 1990).

Bonding. This dimension reflects working together towards common goals (Callaghan et al., 1995). It denotes an affective view of the partner in business exchange relationships. Bonding is based on a general positive feeling towards the exchange partner (Konovsky and Cropanzano, 1991). According to this view, bonding may lead to co-operation between departments because they like and identify with each other.

Empathy. Empathy reflects the ability of partners in relational exchange to understand the needs, problems and constraints of the internal customer (Berry, 1995). These dimensions constitute a relational exchange orientation.

Reciprocity. While trust, bonding and empathy reflect an affective orientation towards the partner in the relationship, the fourth dimension of *reciprocity* is more of a calculative nature (Frazier et al., 1989). In relationships, partners desire a balance with regards to the distribution of outcomes for both partners (Sheaves and Barnes, 1996). The level of effort a party devotes to the relationship depends among other things on the perceived level of effort of the other party (Anderson and Weitz, 1992). Unilateral commitment is rare; instead a 'give-and-take relationship' promotes co-operation (Kramer, 1991). Gupta et al. (1987) found that integration between functions is greater when there is a high level of give-and-take. This includes challenging and confronting the other in a constructive manner with an interest in the other party's point of view. As a result conflicts can more

effectively be solved (Callaghan et al., 1995). In the next section we will discuss what factors influence the mutual relational exchange orientation between marketing and manufacturing.

DETERMINANTS OF A RELATIONAL EXCHANGE ORIENTATION

Several determinants of a relational exchange orientation can be discerned. In the first place, Pfeffer and Salancik (1978) have argued that frequently organizations respond to the demands of other businesses that have control over important resources. In intra-organizational relationships, resource dependence exists when one unit controls resources (including information) that are vital to the performance of another unit (Ruekert and Walker, 1987; Van de Ven and Ferry, 1980). For instance, manufacturing depends on marketing for information sales forecasts of market demand, while marketing depends on the production capacity of manufacturing. Both departments do not possess all of the financial, informational or human resources to accomplish their functional objectives and perform their operations. Therefore, Ruekert and Walker (1987) argue that resource dependence is the key variable with respect to the interfaces that marketing has with other units within the company. Furthermore, Anderson and Narus (1990) and Hallen et al. (1991) have demonstrated that there is a positive relationship between resource dependence and the willingness to make adaptations desired by the partner in the relationship. Based on these observations, we conclude that the more functional units depend on each other's resources, the more they will be inclined to take a relational perspective.

Secondly, communication has been identified as an important determinant of interfunctional relationships (Pettigrew, 1985; Ruekert and Walker, 1987). Communication between marketing and manufacturing departments leads to the bilateral expectation that the units will proactively provide useful information to each other (Heide and John, 1992). At the same time, it has been argued that communication difficulties may also constrain interface effectiveness (Hutt, 1995). Different functional units speak different languages providing divergent solutions to the same problem (Ashforth and Lee, 1990). It has been demonstrated that an important underlying cause of communication errors between marketing and other functional personnel is related to different information styles (Moenaert et al., 1992). Marketing and manufacturing departments in organizations often develop an idiosyncratic terminology which is frequently viewed as a token of their functional identity (Dutton and Jackson, 1987; Zenger and Lawrence, 1989). The use of such a terminology may lead to misinterpretation on the part of other units. Marketing and manufacturing frequently use their own terminology in communications with other departments, not taking into account that the receiving party may not be familiar with this vocabulary and consequently misinterpret the information (Lim and Reid, 1992; Shapiro, 1977). Ruekert and Walker (1987, p. 7) have defined communication difficulty as 'the effort required and problems involved in either getting in contact with or in getting ideas across to the other party'. Communication difficulty has been cited as the primary reason for lack of integration between marketing and manufacturing (Gupta et al., 1987). Communication difficulty may exert a negative influence on a relational attitude. As argued above, interpretative barriers may originate from different information styles or a mismatch between

communication frequency and information need (Frankwick et al., 1994; Maltz and Kohli, 1996). Therefore, we pose that communication difficulties will have a negative impact on the relational exchange orientation between marketing and manufacturing.

A third determinant of a relational exchange orientation that has been identified in the relationship marketing literature is fairness (Kumar et al., 1995). Dwyer et al. (1987) argue that perceived justice in relationships is essential for developing a relational exchange attitude between partners. Anderson and Weitz (1989) conclude that suppliers with a reputation for fairness are better able to develop trust and expectation of continuity in relationship with their customers. Research on organizational and social justice has identified two distinct categories of fairness: *distributive fairness*, that is, fairness of outcomes received, and *procedural fairness*, that is, fairness of process. In the context of the marketing–manufacturing interface, procedural fairness seems most relevant, since rewards on either side of the relation are only partly dependent on the outcome of the interactions (Crittenden et al., 1993). Kumar et al., (1995) have demonstrated that procedural fairness has a positive effect on relational exchange orientation between partners in the distribution channel. For the interface between marketing and manufacturing we expect a similar positive relationship.

Fourthly, interfunctional rivalry can be discerned as a factor that influences a relational exchange orientation. Interfunctional rivalry relates to the degree to which marketing and manufacturing personnel perceive each other as competitors (Maltz and Kohli, 1996). When the rivalry between marketing and manufacturing is high, distrust will develop between the two functions (St John and Hall, 1991). Also, marketing and manufacturing personnel will be less motivated to use the information provided by their perceived opponents (Crittenden et al., 1993). Therefore, interfunctional rivalry may obstruct the building of a co-operative relationship between marketing and manufacturing personnel.

Finally, interfunctional distance between marketing and manufacturing has also been identified as an important determinant of the marketing–manufacturing interface. Interfunctional distance denotes the geographic or physical distance between departments (Maltz and Kohli, 1996). Increasingly, marketing and manufacturing are located in different cities and countries (Ghose and Mukhopadhyay, 1993). For instance, companies are increasingly locating their manufacturing plants in countries with relatively low labour costs. Social exchange theory suggests that interfunctional distance is likely to raise the (psychological) cost of interfunctional intelligence dissemination and, hence, lower the motivation to disseminate (Blau, 1964). These costs include travel and time costs for face-to-face communications and additional co-ordination costs for joint meetings. Both formal and informal communications will be less frequent. There is less opportunity for spontaneous, informal conversations. Social exchange facilitates information exchange (Moenaert et al., 1992). When interfunctional distance is large, communication will be written, by telephone, or by electronic mail, voice mail and electronic data interchange. This may lead to a more formal communication and reduce the exchange from a social and information exchange to a mere information exchange. Interfunctional distance may also lead to insularity and it may reinforce the 'not-invented-here' suspicion (Griffin and Hauser, 1995). Interfunctional distance may have a negative impact on the relational exchange orientation as

department members have less chance to learn and understand each other and to become familiar with each other's information needs.

In the next section we will report on the results of a study that has empirically examined the impact of aforementioned determinants on the relational exchange orientation between marketing and manufacturing.

AN EMPIRICAL STUDY

Questionnaire Design

In our research adapted versions of scales validated in previous research were used. The item statements measuring the relational exchange orientation were adapted from Callaghan et al. (1995) for the context of the marketing–manufacturing interface. All dimensions were measured in three items adapted from the original scale. Items pertaining to resource dependence (four items), communication difficulties (two items) were adapted from Ruekert and Walker (1987). Three items from the procedural fairness scale developed by Kumar et al. (1995) were used. The three-item scale for measuring interfunctional rivalry and single item measure for interfunctional distance were adapted from Maltz and Kohli (1996). All items were made suitable for the setting of internal relationships between marketing and manufacturing. Each of the items pertaining to aforementioned constructs was accompanied by a seven-point Likert-type scale ranging from 1 (= completely disagree) to 7 (= completely agree). Items were translated into Dutch via a procedure of double-back translation (Brislin, 1980). In addition, a number of background variables were included, such as the line of business, the position of the respondent, age, sex, the number of years of experience within the company and the number of years of experience in his/her current position. Two versions of the questionnaire were distributed; one for marketing respondents and one for manufacturing respondents. Sample items for each construct in the questionnaire are included in the appendix.

Sampling and Surveying

From the database from the Chambers of Commerce in the Netherlands a random sample of mid-sized to large manufacturing companies was selected. The selection contained 250 firms with separate marketing and manufacturing departments. These functions were first approached by telephone to ensure their co-operation before a questionnaire was mailed. A total of 450 questionnaires (in a large number of instances marketing and manufacturing managers from the same company agreed to participate) were distributed, accompanied by a personalized cover letter describing the purpose of the study and a university-addressed return envelope. The number of questionnaires addressed to marketing managers was 238 and 212 questionnaires were sent to manufacturing managers. The number returned was 271, yielding an overall response rate of 60 per cent; the response among marketing employees was 62 per cent (148) and among manufacturing employees 58 per cent (123). A small sample of respondents who were not willing to participate in the mail survey were asked to answer an abbreviated telephone survey in order to obtain insight into non-response bias. No significant differences between respondents and non-respondents regarding characteristics and attitudes were discovered. Furthermore, a time trend extrapolation test was carried out. The

assumption of such a test is that respondents who respond less readily are more like non-respondents (Armstrong and Overton, 1977). No significant differences between early and late respondents were found.

In addition to the survey instrument, eight in-depth interviews were conducted with marketing and manufacturing managers of four companies (a television set producer, an office equipment manufacturer, a car manufacturer and a manufacturer of fast moving consumer goods). In the interviews we were able discuss the concepts that were discerned in our questionnaire. The information gathered from the interviews was used to facilitate our interpretation of the results of our survey and to cross-validate our findings.

Construct Validation

To validate the constructs in our study we used structural equation modelling (Anderson and Gerbing, 1988; Bagozzi and Philips, 1991; Bollen, 1989; Gerbing and Anderson, 1988; Steenkamp and van Trijp, 1991). As the numbers of items adversely affect the acceptance of structural equation models (Bentler and Chou, 1987), we split the constructs in our study into two subsets. The first model (model A) contains the antecedents of a relational attitude: (1) resource dependence, (2) communication difficulties, (3) procedural fairness, and (4) interfunctional rivalry. The second model (model B) represents the relational exchange orientation.

PRELIS1 and LISREL7 were used to obtain maximum likelihood estimates for the parameters in confirmatory factor analysis (Jöreskog and Sörbom, 1989) for model A and model B.

Table I. Results of confirmatory factor analysis for determinants[a]

Item	*Resource dependence*	*Communication difficulties*	*Procedural fairness*	*Interfunctional rivalry*
1.	0.49[a]			
2.	0.77 (7.03)[b]			
3.	0.81 (6.98)			
4.	0.35 (4.55)			
6.		0.80[a]		
7.		0.72 (9.49)		
8.			0.82[a]	
9.			0.65 (8.81)	
10.			0.53 (7.44)	
11.				0.66[a]
				0.76 (8.85)
12.				0.69 (8.55)
Reliability	0.71	0.73	0.70	0.75
χ^2	63.51 ($p = 0.07$)			
df	48			
GFI	0.96			
AGFI	0.94			
TLI[c]	0.98			
NFI[c]	0.94			
Total R^2	0.99			

Notes:
[a] Constrained parameter.
[b] Standardized loadings in cells and corresponding *t*-values between brackets.
[c] Null model assumes no underlying factors.

For model A we obtained an adequate fit: $\chi^2(48) = 63.51$ ($p = 0.07$); GFI = 0.96; AGFI = 0.94; TLI = 0.98; NFI = 0.94; Total R^2 = 0.99 (Bagozzi and Yi, 1988; Bollen 1989; Hoelter, 1983; Steenkamp and van Trijp, 1991). Inspecting the normalized residuals we found that none of these substantially exceeded |2.58|, the cut-off value suggested by Jöreskog and Sörbom (1989). Finally, we examined the Q-plot of the normalized residuals. The Q-plot clearly showed a linear trend through the plotted values indicating a good fit (Bagozzi and Yi, 1988; Jöreskog and Sörbom 1989).

Additionally, the reliability of the constructs, using composite reliability, was evaluated (Fornell and Larcker, 1981; Werts et al., 1974). From table I it can be concluded that the antecedent constructs exhibit a high degree of reliability in terms of composite reliability, as all values equal or exceed the recommended value of 0.7. Next, we investigated the validity of the relational exchange constructs.

Table 2 shows the results of the second-order confirmatory factor analysis.

Model Comparison and Estimation

In order to explore the differences between both functional units we used structural equation modelling with observed variables. We first tested whether the

Table II. Results of second-order confirmatory factor analysis

First-order factor loadings (λ_{ij})				
Items	*Reciprocity*	*Trust*	*Bonding*	*Empathy*
1.	0.63[a]			
2.	0.49 (4.54)[b]			
3.	0.58 (4.51)			
4.		0.86[a]		
5.		0.87 (14.24)		
6.		0.62 (10.41)	0.46[a]	
7.			0.86 (6.56)	
8.			0.76 (6.77)	
9.				
10.				0.83[a]
11.				0.87 (12.75)
12.				0.56 (9.11)
Reliability	0.59	0.83	0.74	0.81
Goodness-of-fit measures				
χ^2	107.20 ($p < 0.001$)			
df	50			
GFI	0.94			
AGFI	0.91			
NFI[c]	0.92			
TLI[c]	0.94			
Total R^2	0.73			

Notes:
[a] Constrained parameter.
[b] *t*-values between parentheses.
[c] The null model assumes no underlying factors.

marketing and manufacturing sample shared the same model form using the marketing model as a starting point (Bollen, 1989). The model for the marketing sample was estimated using structural equation modelling in an exploratory fashion. We first estimated a saturated model and a trimmed model for the marketing sample. In the saturated model we assumed that all determinants affect all relational exchange orientation dimensions and consequently all paths were set free in the Γ-matrix. We arrived at the trimmed model by omitting the nonsignificant paths and using the univariate Lagrangian Multiplier (LM) test to find paths that might improve the model fit when set free (Bollen, 1989; Jöreskog and Sörbom, 1989). Subsequently, we used multi-sample analysis to test whether the marketing sample and the manufacturing sample shared the same model form (Bollen, 1989; Jöreskog and Sörbom, 1989). This analysis revealed that the model form was not similar for the marketing and the manufacturing sample ($\chi^2(36) = 1$ (19.24; $p < 0.001$). Consequently, separate model forms were assumed for further analyses.

The results of our analysis are depicted in figure 1 (marketing sample) and figure 2 (manufacturing sample).

The model for the marketing sample showed a good fit to the data: χ^2 (18) = 20.92 ($p = 0.28$), GFI = 0.97, AGFI = 0.92, TLI = 0.96; CFI = 0.96; NFI = 0.90;

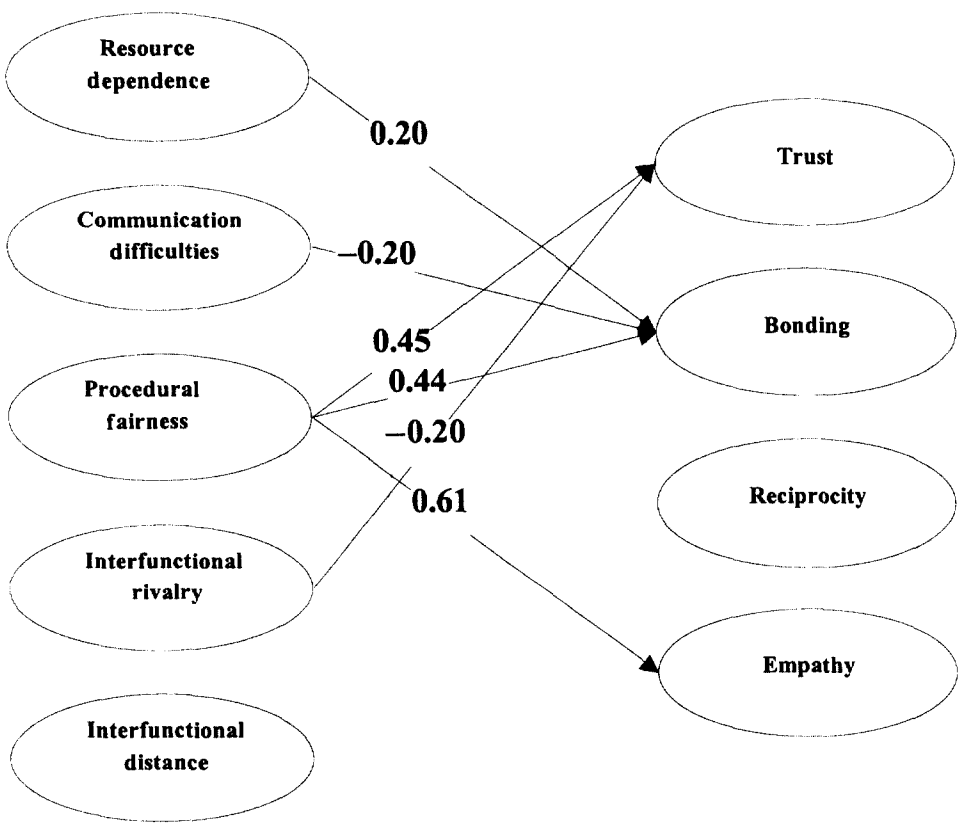

Figure 1. Path analysis – marketing sample

[a] Standardized path coefficient significant at $\alpha = 0.05$

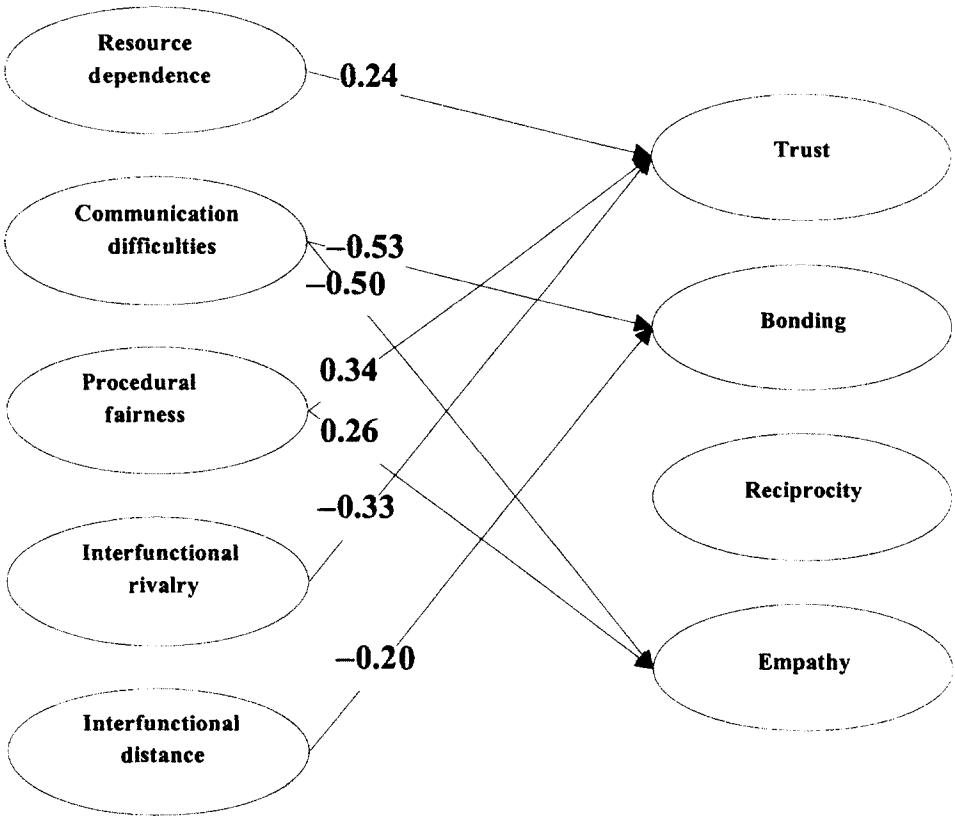

Figure 2. Path analysis – manufacturing sample
[a] Standardized path coefficient significant at $\alpha = 0.05$

Total $R^2 = 0.57$. The results indicate that procedural fairness is a major determinant of three components of relational exchange orientation. Procedural fairness positively affects trust (standardized path coefficient = 0.45), bonding (standardized path coefficient = 0.44) and empathy (standardized path coefficient = 0.61). In addition bonding is positively influenced by resource dependence (standardized path coefficient = 0.20) and negatively by communication difficulties (standardized path coefficient = −0.24). Moreover interfunctional rivalry shows a negative impact on trust (standardized path coefficient = −0.20).

The model for the manufacturing sample reveals an adequate fit: $\chi^2(15) = 22.12$ ($p = 0.11$), GFI = 0.96, AGFI = 0.90, TLI = 0.91; CFI = 0.93; NFI = 0.85; Total $R^2 = 0.76$. For the manufacturing sample we find that communication difficulties negatively affect bonding (standardized path coefficient = −0.53) and empathy (standardized path coefficient = −0.54). Moreover, bonding is also negatively influenced by interfunctional distance (standardized path coefficient = −0.25). Additionally, empathy is positively affected by procedural fairness (standardized path coefficient = 0.26). Resource dependence (standardized path coefficient = 0.24) and procedural fairness (standardized path coefficient = 0.34) exhibit a positive effect on trust. Finally, interfunctional rivalry negatively influences trust (standardized path coefficient = −0.33).

CONCLUSIONS

Discussion

The purpose of the current study was twofold. On the one hand we aimed at testing the applicability of the construct of relational exchange orientation to the marketing–manufacturing interface. On the other hand, we wanted to make a comparative analysis of impact of a number of situational and structural determinants on the relational exchange orientation for marketing and manufacturing personnel.

With regard to our first objective, we attempted to represent at the dimensional level the various components of a relational exchange orientation as perceived by marketing and manufacturing personnel. Our purpose was to examine the scope of the construct of relational exchange orientation by zooming in on its distinct dimensions. We conducted a first and second-order validation of the relational exchange scale developed by Callaghan et al. (1995). We find that the first-order model does not constitute an improvement in fit over the second-order model. As the second-order model performs better in terms of model parsimony, we use this as our basis for structural analyses. This finding is indicative of the discriminant validity of the individual components of relational exchange orientation. It points to the fact that the relational exchange scale consists of four components of a relational exchange orientation that are both theoretically meaningful and empirically discrete. The constructs of relational exchange orientation seem to be aligned more closely with affective components than with the calculative component of reciprocity (cf. affective and calculative commitment (Geyskens et al., 1996)). In this sense, the scale developed by Callaghan et al. (1995) is more likely to underidentify the calculative deliberation of marketing and manufacturing personnel.

Our results with regard to the second objective of our study, a comparative analysis of the impact of determinants of relational exchange orientation, indicate that a number of interesting similarities and differences between the two subsamples exist. In the first place, it can be observed that none of the variables identified as antecedents to relational exchange orientation exert an influence on the reciprocity component of the scale. This can perhaps be explained by introducing the distinction between calculative and affective commitment in social exchange (Meyer and Allen, 1991). On the one hand, commitment in relationships can be seen as a calculative act in which costs and benefits are traded off. On the other hand, commitment may be the result of an affective orientation towards and value congruence with the partner which is, as Buchanan (1974, p. 533) describes, 'apart from its purely instrumental worth'. Our results for the selected determinants of relational exchange orientation amplify the fact that such an orientation is primarily viewed as an affective construct and that calculative facets such as reciprocity require other antecedents such as explicit monetary or psychological benefits of the relationship.

Secondly, our path analyses of the marketing and manufacturing samples yield intricate patterns between the relational exchange components and their antecedents. We find positive relationships between resource dependence and bonding for the marketing sample on the one hand and between resource dependence and trust for the manufacturing sample on the other hand. Previous studies (McCann and Galbraith, 1981; Ruekert and Walker, 1987) have shown that resource dependence promotes the amount of interaction and authority in deci-

sion making in marketing interfaces. From the interviews with marketing managers it appeared that resource dependence is often associated with the frequency with which interaction takes place and informal contacts can be developed. As both departments interact frequently because they need to exchange functional task information in order to perform their own activities, bonding occurs. On the other hand, manufacturing respondents indicated that in areas in which mutual dependence exists it is important that no hidden agendas or surprises come up (e.g. sudden changes in production runs due to promotional campaigns).

With regards to the influence of communication difficulties, we find that a negative effect on bonding for the two types of respondents, although this effect is more pronounced for the manufacturing sample. When miscommunication takes place regularly it becomes more difficult to like and identify with each other. Particularly, manufacturing respondents seem to adhere to this opinion. In addition, we find an almost similar negative effect of communication difficulties on empathy for the manufacturing sample. One potential explanation for this is offered by the qualitative data gathered in the interviews. Manufacturing managers view their marketing colleagues as experts in the field of communication ('It is marketing's job to communicate') and at the same time manufacturing members are sometimes frustrated with the fact that manufacturing jargon (e.g. material codes, design specifications, material flows) often gets in the way of interdepartmental conflict solving: 'It is very hard sometimes to explain technical matters to non-technical people'. According to Lawrence and Lorsch (1967) individual predispositions, such as educational background and personal capability, are a major cause of miscommunication in organizational settings. Indeed, it is argued by respondents from both 'camps' that differences in training often stand in the way of efficient communication at the marketing–manufacturing interface: 'They [marketing] do not seem to grasp that the lay-out of our machining is and cannot be product but process based.'

Procedural fairness appears to be an important determinant of the components of a relational exchange orientation. Especially, for the marketing subsample pronounced positive relationships were found between this determinant and trust, bonding and empathy. This suggests that the evaluation of other units within the firm is influenced by norms of perceived justice in the process of social interaction (Hutt, 1995). Norms may pertain to impartiality and consistency. These norms may promote behaviour aimed at achieving relational goals instead of departmental goals. One possible explanation for the relative strength of this antecedent is that marketing's focus on relationships with external customers makes it also more sensitive to the wants and needs of internal customers.

Our results reveal that interfunctional rivalry exerts a negative influence on trust for both subsamples. During the interviews it became clear that issues of diversity and dependability lead to decreased levels of trust between the two departments. Particularly, rapidly changing sales forecasts remain a constant source of mistrust for the manufacturing respondents. It is argued that when production schedules are upset this will result in increased costs. In order to deal with an important aspect of interfunctional rivalry pertaining to conformity, reduction in the resource and product complexity has been advanced. One way to achieve this is to introduce higher levels of product standardization and the modularization of product designs. At the television set producer this yielded considerable advantages in terms of reduced complexity in manufacturing lead

times and inventory levels. Hence, the needs of marketing and manufacturing departments could be more balanced. At the same time, however, the reduction in complexity also required a wide range of additional adaptations which were for the major part funded out of the manufacturing budget despite earlier agreements about shared funding. In this manner the measures that were taken to solve issues pertaining to interfunctional rivalry lead to mistrust between the two departments.

Finally, with regards to interfunctional distance, a negative effect on bonding was encountered for the manufacturing sample. When the physical distance between the departments is larger, there is less opportunity for informal contacts and socializing. This finding was explained as follows by the respondents in the interviews. Manufacturing plants are relatively more often located apart from the centres of power in company headquarters. Marketing, on the other hand, is frequently located in central company office buildings. Therefore, manufacturing employees, as opposed to marketing employees, have less opportunity for casual and informal interaction that may result in a sense of bonding.

Theoretical Implications

Part of the strength of a research project lies in the recognition of its limitations. This may suggest potential issues that merit future research. In the first place, supplementing a global measure of relational exchange orientation with measures of individual components (i.e. trust, bonding, reciprocity and empathy) of a relational exchange orientation may lead to a more versatile use of this measurement instrument. For instance, when the purpose of a study is to focus more on the affective components of relational exchange (e.g. trust, bonding and empathy) it may be preferable not to measure the more calculative component (e.g. reciprocity). However, additional construct validation research is needed to refine the measurement properties of the relational exchange orientation scale and its individual components.

Secondly, our findings exclusively pertain to the marketing–manufacturing interface. Future research will have to reveal whether the results are generalizable to other interfaces that marketing has within the firm. Using the concepts of network analysis (Iacobucci, 1996), marketing interface with a variety of other functional units could be examined simultaneously.

Thirdly, the concepts were measured at one point in time, thus essentially from a static perspective. It may be worthwhile to study marketing interfaces over time in order to be able to take into account the dynamics of intra-organizational relationships. In a longitudinal design, the effect of contextual influences such as the introduction of new co-ordinating structures, budget rounds communication and information technology can be taken into account.

Fourthly, future research could explore additional antecedents of relational exchange orientation between departments. One aspect that deserves a more in-depth study is the relation between a relational attitude and various degrees of dependence asymmetry or the relationship between a relational attitude and functional identification (Fisher et al., 1997). Furthermore, it has been suggested that a system of profit-sharing between functional units in organizations on the basis of internal customer satisfaction may decrease cross-functional barriers (Griffin and Hauser, 1995). In this way bonuses based on outcomes to one functional unit may be allocated by using the input of another on the basis of mutually approved

objectives. Increasing the interdependence between functional units in this way may affect the relational attitude.

Finally, marketing interfaces are likely to differ with the competitive strategies that are used by the firm and the market circumstances that are faced by the organization. For instance, the marketing–manufacturing relationship within businesses operating within rapidly developing markets or pursuing aggressive product or market development will differ from those organizations primarily concerned with consolidating product-market positions. Further research is needed to investigate the impact of the type of environment on the interface between marketing and manufacturing.

Managerial Implications

An effective marketing–manufacturing interface is essential to a firm's survival in markets in which short product life cycles and innovativeness have become norms of corporate success. As Morgan and Hunt (1994, p. 20) state, 'to be an effective competitor . . . requires one to be a trusted co-operator. Our study demonstrates the importance of paying attention to resource dependence, communication difficulties, procedural fairness, interfunctional rivalry and interfunctional distance in determining a sense of trust, bonding and empathy for the marketing–manufacturing interface. One obvious managerial implication of our findings is that it may be possible to improve relationships between marketing and manufacturing by developing interfunctional configurations and collaboration mechanisms that increase mutual dependence on resources and decrease communication difficulties. In the context of the marketing–research and development integration, Griffin and Hauser (1995) suggest that co-locating the two business functions will foster a higher degree of information sharing. Also, the movement of personnel between marketing and manufacturing departments may lead to the exchange of background or contextual information that in turn may increase the understanding of how and why certain decisions are made. As contextual barriers are overcome through the use of informal networks and more information is communicated and utilized between the departments, trust and a sense of bonding and empathy will develop. Furthermore, effective integration of the marketing and manufacturing functions can be achieved by adapting the organizational structure. For example, joint responsibility by marketing and manufacturing employees for a certain project provides the necessary autonomy to work on mutual trust and bonding. Other examples advocated as being more conducive to increased integration between two or more organizational functions are co-ordinating groups, matrix organizations and project teams (Griffin and Hauser, 1995).

Secondly, the development of reward systems that credit organizational functions for relational processes and procedures may lead to increased perceptions of equity and enhance the co-operative behaviour of functions. In the majority of organizations there is a major emphasis on functionally based performance evaluations. For instance, marketing employees frequently receive bonus payments on the basis of their sales achievements. Incentives and rewards applied to relational performance focus the attention of employees to the importance of interfaces. Compensation based on marketing–manufacturing team performance may be effective both in terms of project success as well as relational integration between the two functions. Promoting relational goals and performance assessment as well as informal social systems that provide cross-functional contact outside the formal

boundaries of each unit may reduce interfunctional rivalry between marketing and manufacturing departments and establishes a relational exchange orientation based on trust, bonding and empathy.

APPENDIX

Sample items

Construct	*Sample item*
Resource dependence	In order to accomplish my goals and responsibilities, I need resources that are supplied by the marketing department
Communication difficulties	It is hard getting ideas clearly across to the marketing department
Procedural fairness	The marketing department is consistent in its dealings with all other departments within the company
Interfunctional rivalry	The marketing department has other goals and priorities than my department
Interfunctional distance	Please indicate where your department and the marketing department are located: (1) same floor, same building, (2) different floors, same building, (3) same building different cities, (4) different cities, (5) different countries
Trust	I can rely on the marketing department
Bonding	I co-operate well with the marketing department because we have things in common
Reciprocity	If marketing takes my needs and wishes into account, I will consider their needs and wishes
Empathy	The marketing department understands what I want

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